

## CLAIMS

1. A catalytic converter for cleaning exhaust gas comprising:  
a heat-resistant support; and

5 a coating formed on the support, the coating including at least one kind of catalytically active substance and a zirconium oxide;

wherein the zirconium oxide having a pre-aging specific surface area I and a post-aging specific surface area A, the  
10 aging being performed in an atmosphere of 1,000 °C for 5 hours; and

wherein  $A/I \geq 0.4$  and  $I \geq 40 \text{m}^2/\text{g}$ .

2. The catalytic converter according to claim 1, wherein the  
15 zirconium oxide is a zirconium complex oxide represented by the following formula,



where R represents a rare earth element other than Ce or an alkaline earth metal, the zirconium complex oxide meeting  
20  $0.12 \leq x \leq 0.25$  and  $0.02 \leq y \leq 0.15$  in said formula.

3. The catalytic converter according to claim 1, wherein the catalytically active substance is selected from a group consisting of Pt, Rh and Pd.

25 4. The catalytic converter according to claim 1, wherein the coating further comprises an oxygen-storing oxide.

5. The catalytic converter according to claim 4, wherein the oxygen-storing oxide is a cerium complex oxide.
6. The catalytic converter according to claim 1, wherein the  
5 coating further comprises at least one heat-resistant inorganic oxide selected from a group consisting of alumina, silica, titania and magnesia.
7. The catalytic converter according to claim 1, wherein the  
10 heat-resistant support has a honeycomb structure.
8. A process for making a catalytic converter for cleaning exhaust gas, comprising the steps of:
- performing preliminary baking of a zirconium oxide for  
15 causing a decrease in specific surface area of the zirconium oxide; and
- coating the preliminarily baked zirconium oxide on a heat-resistant support together with at least one kind of catalytically active substance.
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9. The process according to claim 8, wherein the preliminary baking step is performed at a temperature of not lower than 700 °C.
- 25 10. The process according to claim 8, wherein the preliminarily baked zirconium complex oxide is first treated to support the catalytically active substance and then coated on the heat-resistant support.

11. The process according to claim 8, wherein the zirconium oxide is a zirconium complex oxide represented by the following formula,



5 where R represents a rare earth element other than Ce or an alkaline earth metal, the zirconium complex oxide meeting  $0.12 \leq x \leq 0.25$  and  $0.02 \leq y \leq 0.15$  in said formula.

12. The process according to claim 8, wherein the catalytically  
10 active substance is selected from a group consisting of Pt, Rh and Pd.